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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Re:	Application of:	Juergen BENZ et al.
	Application No.:	10/791,432
	Filed:	March 2, 2004
	Art Unit:	3655
	Examiner:	David D. Le
	Attorney Docket No.:	588.1016
	Title:	**METHOD FOR CONTROLLING A CLUTCH**

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

October 5, 2009

APPELLANTS' REPLY BRIEF UNDER 37 C.F.R. §41.41

Sir:

Appellants submits this Reply Brief for consideration of the Board of Patent Appeals and Interferences (the "Board") in response to the Examiner's Answer dated August 5, 2009 and in support of their appeal of the Advisory Action dated September 15, 2008 and the Final Rejection dated May 20, 2008. Appellants respectfully reassert each of the arguments asserted in Appellants' Brief dated April 29, 2009, and provide herein only a rebuttal of arguments raised in the Examiner's Answer.

No fee is believed required. If any fee is required at this time, the Assistant Commissioner is authorized to charge payment of the same to Deposit Account No. 50-0552.

ARGUMENTS

The following additional remarks are submitted for consideration by the Board under 37 CFR §41.41.

Rejections under 35 U.S.C. §103

Claims 1 to 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shigyo (U.S. Patent No. 6,878,095) in view of Nozaki et al. (U.S. Patent No. 5,547,438).

Claims 1 and 18

As admitted in the Office Action, Shigyo fails to teach or show "reengaging the clutch when a gas pedal is operated in the free-wheeling mode ***only when*** an engine rotational speed is above a transmission input rotational speed" (emphasis added) as recited in claims 1 and 18. Shigyo teaches putting the automatic clutch in the slip state, not the disengaged state, to prevent the engine braking from becoming excessively large, when the detected deceleration is greater than or equal to a present first preset deceleration value. If the deceleration value becomes larger than a second preset deceleration value the automatic clutch is finally disengaged completely. Therefore Shigyo does not address at all the limitation of "reengaging the clutch when a gas pedal is operated in the free-wheeling mode *only when* an engine rotational speed is above a transmission input rotational speed." (emphasis added).

As a result of this deficiency in Shigyo, the Examiner cited Nozaki for the "general teaching that the clutch (24) should be engaged when the engine speed (N_E) is higher than the transmission input speed (N_T) so that the damper (23) can desirably absorb an engaging shock of input and output coupling members of the clutch (24) (Nozaki i.e., column 10, line 66 – column 11, line 45)." (Answer, p. 4). In Applicants' Appeal Brief, Applicants explained that the clutch 24 is actually a lock-up clutch within a torque converter for an automatic transmission and that the operation of such lock-up clutches are quite different from the clutch of the present invention. The Examiner provided, in the Examiner's Answer, two responses to this position.

First, the Examiner alleged that claims 1 and 18 "only require the clutch to be located between the drive motor and the transmission [and] clutch 24 as shown in Fig. 5 of Nozaki is located between the drive motor and the transmission." (Answer, p. 10). One of ordinary skill in

the art would readily recognize that the "clutch" of claims 1 and 18 is a conventional clutch in which energy is transferred from the engine to the transmission via corresponding discs attached to the engine and transmission, respectively. One of ordinary skill in the art would also readily recognize that the lock-up clutch in a torque converter is quite different, as a torque converter provides a fluid coupling between a pump attached to the engine crankshaft and a turbine attached to the transmission input shaft. The lock-up clutch is used to lock the pump to the turbine in certain circumstances, providing a mechanical connection instead of a fluid connection. Thus, the lock-up clutch of Nozaki is different from the claimed clutch because at least for the reason that both claims 1 and 18 specify a "manual transmission" and because one of ordinary skill in the art would recognize that torque converters are not ordinarily used in conjunction with manual transmissions.

Second, the Examiner alleges that he relies on Nozaki only for the "general teaching that a clutch should be engaged when the engine speed is higher than the transmission input speed so that the damper can desirably absorb an engaging shock of input and output coupling . . . ." (Answer, p. 11). Applicants respectfully point out that due to the differences between a disc-based clutch as described in the present invention and the lock-up clutch used in the torque converter of the Nozaki, the question of when to engage the clutch in Nozaki is totally irrelevant to the question of when to engage the clutch in the present invention.

For these reasons, Applicants respectfully request that the rejections of claims 1 to 19 be overturned.

Claim 20

Claim 20 recites "[a] method for controlling a clutch located between a drive motor and an automated manual transmission of a drive train, the method comprising:

controlling the clutch so as to change from an engine braking mode to a free-wheeling mode, wherein the clutch is disengaged to implement the free-wheeling mode when a transmission gear is equal to or less than a maximum free-wheeling gear."

Shigyo does not teach or show "the clutch is disengaged to implement the free-wheeling mode when a transmission gear is equal to or less than a maximum free-wheeling gear." The

Examiner cites to col. 6, lines 45 to 53 of Shigyo as disclosing this feature. (Answer, p. 11). This portion of Shigyo reads:

> With the thus arranged system of this embodiment according to the present invention, as shown in FIG. 4, the decreased degree of the engagement force of automatic clutch 4 becomes large as the deceleration becomes larger, and finally automatic clutch 4 is fully disengaged (released) when the deceleration α becomes greater than or equal to preset deceleration α1. Therefore, even under a condition that engine brake is increasing due to the deceleration α, the control system according to the present invention firmly prevents the excessive engine brake from becomes excessively large, and ensures the functional advantage under the whole deceleration conditions.

(Shigyo, Col. 6, lines 42 to 53). As evident, this portion of Shigyo does not discuss transmission gearing at all. Nozaki et al. also does not show this limitation because disengagement of a lock-up clutch does not provide a free-wheeling mode.

Reversal of the rejection of independent claim 20 under 35 U.S.C. §103(a) is respectfully requested.

Claim 21

Claim 21 recites "[a] method for controlling a clutch located between a drive motor and an automated manual transmission of a drive train, the method comprising:

controlling the clutch so as to change from an engine braking mode to a free-wheeling mode, wherein the clutch is disengaged to implement the free-wheeling mode when a vehicle's driving speed is less than a maximum free-wheeling speed."

Shigyo does not teach or show "the clutch is disengaged to implement the free-wheeling mode when a vehicle's driving speed is less than a maximum free-wheeling speed." The Examiner cites to col. 6, lines 7 to 53 of Shigyo as disclosing this feature. (Answer, p. 11). However, this portion of Shigyo does not discuss "a maximum free-wheeling speed." Nozaki et al. also does not show this limitation because disengagement of a lock-up clutch does not provide a free-wheeling mode.

Reversal of the rejection of independent claim 21 under 35 U.S.C. §103(a) is respectfully requested.

Claim 22

Claim 22 recites "a method for controlling a clutch located between a drive motor and an automated manual transmission of a drive train, the method comprising:

controlling the clutch so as to change from an engine braking mode to a free-wheeling mode, wherein the clutch is disengaged to implement the free-wheeling mode when no downhill driving is detected."

Shigyo does not teach or show "the clutch is disengaged to implement the free-wheeling mode when no downhill driving is detected." The Examiner again cites to col. 6, lines 45 to 53 of Shigyo as disclosing this feature. (Answer, p. 12). This portion of Shigyo is quoted above. As evident, this portion of Shigyo does not discuss disengaging a clutch upon the detection of no downhill driving. Nozaki et al. also does not show this limitation because disengagement of a lock-up clutch does not provide a free-wheeling mode.

Reversal of the rejection of independent claim 22 under 35 U.S.C. §103(a) is respectfully requested.

CONCLUSION

It is respectfully submitted that the application is in condition for allowance. Favorable consideration of this Reply Brief is respectfully requested.

Respectfully submitted,
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